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Applicant: Henry J. Pepin

Serial No.: 09/898,687

Filed: July 3, 2001

Group Art Unit: 3731

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PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re: Henry J. Pepin

Confirmation No.: 1767

Serial No.: 09/898,687

Examiner: V. Bui

Filing Date: July 3, 2001

Group Art Unit: 3731

Docket No.: 1001.1458101

Customer No.: 28075

For: CATHETER HAVING VARIABLE WIRE SIZE RADIOPAQUE BRAID

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**REPLY BRIEF UNDER 37 C.F.R. § 1.192**

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Dear Sir:

Pursuant to 37 C.F.R. § 41.41, Appellants hereby submit this Reply Brief in response to  
the Examiner's Answer mailed December 3, 2004. Remarks begin on page 2.

### REMARKS

As a preliminary matter, Appellant thanks the Examiner for pointing out in the Examiner's Answer the inadvertent error contained in the Appeal Brief with respect to numbering the rejected claims. The Examiner is correct in this regard.

With respect to grouping of claims, Appellant respectfully points out that, by virtue of amendments to the 37 C.F.R. made effective September 13, 2004, 37 C.F.R. §1.192(c)(7) has been removed. Thus, Appellant is no longer required to include a statement in the Appeal Brief as to whether or not the claims stand or fall together. Thus, the Appeal Brief was correct.

With respect to the pending final rejections, Appellant noted in the Appeal Brief that the primary reference (Steen et al., U.S. Patent No. 6,213,995) is directed to forming braided flexible tubing that includes signal transmitting elements. These signal transmitting elements may be electrically conductive wires or optical fibers. If the signal transmitting elements are chosen to be electrically conductive wires, Steen et al. disclose a number of metals from which these signal transmitting elements may be formed. In particular, Steen et al. list copper, a variety of copper alloys and coated coppers, aluminum, silver, gold, platinum or rhodium. Steen et al. do not disclose tungsten.

With respect to obviousness, the Examiner has repeatedly asserted that it would be obvious to substitute tungsten for the platinum allegedly taught by Steen et al. This is incorrect, for several reasons. As will be discussed in answer to the Examiner's arguments as presented in the Examiner's Answer, there is no reason to select platinum as the metal taught by Steen et al., and no reason to substitute tungsten.

In order to establish a *prima facie* obviousness rejection, all the claim limitations must be taught or suggested by the prior art, there must be a reasonable expectation of success, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine reference teachings. (M.P.E.P. § 2143.01 and § 2145). Appellants will demonstrate once again that, at a minimum, there is no reasonable motivation to modify the cited reference as suggested by the Examiner.

In forming an electrically conductive wire to serve as a signal transmitting element, one of ordinary skill in the art would be motivated to choose a material that is known to be a good electrical conductor. For example, copper is a well-known, widely-used, electrical conductor. Copper has an electrical conductivity of  $0.596 \times 10^6 \Omega^{-1} \text{ cm}^{-1}$ . Silver is another good electrical

conductor having an electrical conductivity of  $0.630 \times 10^6 \Omega^{-1} \text{ cm}^{-1}$ . Of course, a number of electrically conductive materials exist, and all metals are, by definition, at least somewhat conductive to electricity.

Nonetheless, if one of ordinary skill in the art were to select a metal to form an electrically conductive wire to use as a signal transmitting element, he or she would select a metal that is known as a good electrical conductor. To do otherwise would run counter to that person's education, experience and training. Now, while Steen et al. do indeed disclose platinum, it is not correct to interpret this disclosure as teaching the use of platinum. As noted above, an individual of even ordinary skill in the art would choose a good electrical conductor. Platinum is not a good electrical conductor, having an electrical conductivity of only  $0.0966 \times 10^6 \Omega^{-1} \text{ cm}^{-1}$ .

Thus, while Steen et al. do disclose platinum, no one of even ordinary skill in the art would be motivated to choose platinum in order to form electrically conductive wires to use as the signal transmitting elements taught by Steen et al. In the Appeal Brief, Appellant argued that Steen et al.'s listing of possible metals is nothing more than a laundry list. In reply, the Examiner has asserted, in Argument (1) as presented in the Examiner's Answer, that there is no evidence within the reference that this is merely a laundry list.

In rebuttal, Appellant note that of the elemental metals listed by Steen et al., these materials have electrical conductivities that range from  $0.0966 \times 10^6 \Omega^{-1} \text{ cm}^{-1}$  for platinum to  $0.630 \times 10^6 \Omega^{-1} \text{ cm}^{-1}$  for silver. Silver, for example, has an electrical conductivity that is about 6.5 times that of platinum. One of ordinary skill in the art will recognize this as a substantial difference and would recognize that the patent lists a number of metals, apparently without regard to usefulness in the apparatus described by Steen et al. Thus, the listing of metals provided by Steen et al. is nothing more than a laundry list and would be interpreted as such by an individual possessing even average skill in the art.

The Examiner has continued to assert that it would be obvious to substitute tungsten for the platinum allegedly taught by Steen et al. As noted above, no one of even ordinary skill in the art would interpret the reference as teaching the use of platinum. Moreover, while tungsten is somewhat more electrically conductive than platinum, it is still a relatively poor conductor of electricity. In particular, tungsten has an electrical conductivity of only  $0.189 \times 10^6 \Omega^{-1} \text{ cm}^{-1}$ , meaning that tungsten is a relatively poor conductor of electricity, particularly when compared to

more conventional conductors such as copper. As discussed above, one of even ordinary skill in the art would not choose such a poor conductor. There is no logical reason to substitute tungsten.

The Examiner has stated, in Argument (2) provided in the Examiner's Answer, that it would be obvious to substitute tungsten because it is well known that tungsten is more electrically conductive than platinum. The electrical conductivity numbers discussed during prosecution, provided in the Appeal Brief and presented once again here in the Reply Brief acknowledge that tungsten is more conductive than platinum. This point is not in dispute.

Rather, Appellant refutes the Examiner's assertion that one of skill in the art would substitute tungsten for the platinum (allegedly) taught by Steen et al. because tungsten is more conductive than platinum. As discussed above, one of even ordinary skill in the art would not interpret Steen et al. as teaching the use of platinum.

Even if Steen et al. is assumed to teach the use of platinum (an assumption Appellant is unwilling to make), no one of even ordinary skill in the art would be motivated to substitute tungsten, as the reference itself lists several materials that have significantly higher electrical conductivity values. One of skill in the art, if they wanted to substitute a more conductive material in practicing the invention described by Steen et al., would merely turn to one of the other materials actually disclosed by the reference as such an individual would recognize the more suitable nature of these materials. The claimed invention is both novel and non-obvious over the cited reference.

In the Appeal Brief, Appellant noted that one of skill in the art would not be motivated to use tungsten, as tungsten is well-known to be fragile. The Examiner has stated, in Argument (3) provided in the Examiner's Answer, that tungsten has a higher tensile strength than platinum by virtue of a significantly higher modulus of elasticity value. Appellant is not confident that modulus of elasticity is an appropriate measure of fragility.

As demonstrated herein, one of ordinary skill in the art would have absolutely no motivation, based at least on their own education and experience, to modify the teachings of Steen et al. as suggested by the Examiner. As stated at M.P.E.P. § 2144 (citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596), the motivation to modify a reference must come from either a reference, reliance on scientific principle, common knowledge, or legal precedence.

In the instant rejection, the cited reference is silent as to suggesting the use of tungsten. The Examiner has provided no reference teaching the use of tungsten. While the Examiner has provided Imagaki et al. (U.S. Patent No. 5,630,806) as a rebuttal reference, the reference relies upon stainless steel for radiopacity and thus cannot be considered as teaching the use of tungsten. Therefore, there is no reasonable motivation to modify Steen et al. as suggested by the Examiner.

With respect to scientific principle and common knowledge, Appellant has amply demonstrated that one of ordinary skill in the art, when considering the teachings of Steen et al., would have absolutely no motivation to modify Steen et al. as suggested by the Examiner. Steen et al. is unconcerned with radiopacity. Instead, Steen et al. is concerned with transmitting a signal such as an electrical signal from one end of a catheter to another.

With respect to legal precedent, none is believed to exist. Thus, Appellant asserts that there is no reasonable motivation, absent hindsight, to modify the cited reference as suggested. Therefore, the *prima facie* obviousness rejection is flawed and should be withdrawn. In light thereof, Appellant requests the rejection be reversed.

For at least the reasons stated above, the rejections of claims 1-2 and 4-24 under 35 U.S.C. § 103(a) should be reversed.

Respectfully submitted,

Henry J. Pepin

By his attorney,

Date: \_\_\_\_\_

2/1/05



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